



FINDINGS OF HRSA/MCHB SUPPORTED RESEARCH ON INFANT NUTRITION PUBLISHED IN U.S. AND BRITISH JOURNALS

MCHB Research Program Announcement, October 4, 1999.

Three articles based on findings of HRSA/MCHB funded infant nutrition research have been recently published in U.S. and British journals. Two of the three articles are based on data from a longitudinal study of a group of non-organic failure-to-thrive and non-failure-to-thrive control infants who participated in an MCHB-funded randomized clinical trial of a child development-based nutritional intervention. The third article reports on a randomized trial which sought to evaluate the safety and acceptability of a calcium-supplemented infant formula and to provide an estimate of its effects on lead absorption in children who had clinically significant environmental exposure to lead.

The first article, "Infant Feeding Practices of Low-Income, African-American Adolescent Mothers: An Ecological, Multigenerational Perspective," was written by Margaret Bentley, Ph.D. et al. of the University of North Carolina and was published by the British journal *Social Science & Medicine* (49 (1999)1085-1100). Key finding of the study were that maternal grandmothers were often the primary decision-makers regarding infant feeding and that the adolescent mothers in the study frequently adhered to the grandmothers' advice on infant feeding practices even when their advice contradicted recommendations made by the health workers. This pattern occurred both because grandmothers had extensive physical access to their grandchildren and because teen mothers were dependent upon grandmothers. Based on the findings of the study, the authors recommend that maternal grandmothers of adolescent girls be targeted for educational interventions and that the broad complex of reasons for the early introduction of solids should also be addressed in the intervention. In addition to reassuring mothers and grandmothers about the nutritional qualities of breast-milk or formula and the risks of early introduction of solids, the investigators recommended that the intervention should incorporate developmental expectations of infant's feeding behavior, alternative ways of managing baby's crying and sleeping, and clarify the difference between infant and an adult nutritional needs.

The second article, "Predicting Longitudinal Growth Curves of Height and Weight Using Ecological Factors for Children With and Without Early Growth Deficiency," appeared in the *Journal of Nutrition* (129 (1999): (2S Supplement) 539S-543S) and was authored by Maureen M. Black, Ph.D. et al, of the Department of Pediatrics of the University of Maryland School of Medicine. Study findings indicate that at age six children with a prior history of growth deficiency demonstrated slower rates of growth than children in the community group without a history of growth deficiency. In the community group changes in children' height and weight were related to maternal perception of health and temperament and maternal nurturance during feeding, whereas in the failure-to-thrive group, maternal perceptions and behavior were not in synchrony with children's growth. According to the investigators these findings suggest that, in addition to genetic factors, growth is dependent on a nurturant and sensitive care giving environment. Interventions to promote growth should consider child and family characteristics, including maternal perceptions of children's health and temperament and maternal mealtime behavior.

The third study, Randomized Trial of Calcium Glycerophosphate-Supplemented Infant Formula to Prevent Lead Absorption, was conducted by James D. Sargent, M. D. et al. of the Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire and was published in *The American Journal of Clinical Nutrition* (69 (1999)1224-1230). Study findings demonstrated the safety and acceptability of the iron-fortified infant formula supplemented with calcium glycerophosphate and did not have a measurable effect on urinary calcium excretion, calcium homeostasis, or iron status. There was a significant effect on blood lead concentration during the first four months of the study that was in the direction expected. The effect was not sustained throughout the 9 months of the study thus it can not be concluded that the calcium supplementation prevented lead absorption in the study population. Investigators recommended a follow-up study using a population that has a higher lead

exposure than that of the children of their study.